

*Philadelphia's program in the control of accidental poisonings delineates possible guidelines for other metropolitan areas with similar resources and interest. The National Clearinghouse for Poison Control Centers serves as a consulting and coordinating agency for such programs throughout the country.*

## Control of Accidental Poisoning in Philadelphia

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THE TELEPHONE rang at the Philadelphia Poison Information Center. The man on duty lifted the receiver. A woman on the line pleaded tearfully, "My baby has just swallowed a mouthful of paint remover! What should I do?"

Swiftly, the duty officer determined exactly what had been taken and the amount; the age, sex, and weight of the victim; and the necessary information to permit followup of the case. All the facts were recorded on an especially designed form which served as both a checklist and a record. The card file and the selected texts of the extensive reference library containing definite information on more than 20,000 products were consulted.

The mother was then given instructions. "Have your child sip ice-cold orange juice or ice water to prevent vomiting and delay absorption. He should have medical attention immediately. Don't be alarmed but take him to your nearest hospital right away. Do you have transportation? Your husband has the car? Then get ready to leave and we will have a police car pick you up right away. What hos-

pital will you go to? We will call to say that you are coming in. The police car will be at your home right away."

A call to the police department dispatcher sent a car to call for the mother and child. Another call was put to the emergency ward of the hospital to give notice of the case coming in and the physician in charge was given information on the composition of the product and treatment recommended in data at the center. The hospital's special treatment facilities, necessary medicinals, and supplies made preparations possible before the arrival of the child. Prompt treatment was given and the child recovered completely.

This case represents the services performed every day by the Poison Information Center in Philadelphia. The center is an important and dramatic service designed to assist the medical and lay members of the community to make maximum use of the precious minutes which lie between the occurrence of the poisoning accident and the beginning of the poisoning injury. Rapidity and severity of injury vary according to the substance ingested and other factors, but in most accidents, there is some time which can be used to prevent or reduce injury or save a life.

In more difficult cases, the center calls for the

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services of one or more of the volunteer members of five panels of consultants or the chief toxicologist of the office of the medical examiner. When information on composition of a product is not available in the community, a call is placed to the manufacturer for discussion with the company toxicologist or other appropriate person.

Poison control is an integral part of the accident control program of the Philadelphia Department of Public Health. Within this framework, accidental poisonings are regarded as simply another type of accident to be controlled by all available means.

Control of accidents is conducted comprehensively in the department's program as well as in depth. Ideally, the objective is to prevent the occurrence of the accident. Primary concern, however, is to prevent or minimize possible injury, if an accident does occur. The need for rehabilitation of persons sustaining accidental injuries is also recognized. All of these stages of control are the concern of the department.

To meet these needs, an extensive interdisciplinary public health and community effort has been developed over the past several years. Responsibility for the planning, development, and direction of poison control rests with the accident control program which is centered in the community hygiene section of the division of environmental health. Poison control functions are conducted by various divisions of the department having necessary resources, through agreement reached between the respective divisions and the director of the accident control program. For example: A coordinating committee composed of heads of the cooperating divisions reviews special questions or problems encountered in the operation of poison control activities. Personnel and other resources contributed by the respective divisions are provided presently through use of funds budgeted to the respective divisions. Proposals supported by the committee have requested allocation of specific funds for poison control to the accident control program which would in turn allocate necessary funds to cooperating divisions according to program needs.

Community contributions of services are received directly from individuals, hospitals, and

professional organizations, and the Greater Philadelphia Safety Council.

One of the most important community activities is the system of poison control coordinators. At the request of the poison control program director, a member of the staff of each general and children's hospital of the city was designated by the hospital administrator to work with the health department in furthering the control of accidental poisonings. Usually, the person designated is a physician having substantial responsibility in the hospital. In some cases, an upper level administrator is designated. Responsibilities of the poison control coordinators include liaison with the poison control program, staff education, supervision of reporting of cases treated at the hospital, and development of emergency treatment techniques and facilities to the maximum extent possible in their respective hospitals.

Initial impetus for the program came from the Philadelphia Pediatric Society which requested the health department to establish a poison control program and offered its assistance for this purpose. In the autumn of 1955, an advisory committee was formed to review the department's plans and to develop specific program proposals which could be supported by the entire community. In addition to several pediatricians and other specialists representing their respective societies and the five medical schools of the city, the committee included representatives of a variety of other organizations concerned with potentially poisonous substances. These included the Manufacturing Chemists Association, American Pharmaceutical Association, American Industrial Hygiene Association, Eastern Pennsylvania Pest Control Association, American Chemical Society, Philadelphia Association of Retail Druggists, and a staff representative of the Philadelphia Department of Public Health.

The program as ultimately evolved represents a balance between prevention and efforts to minimize the consequences of accidental poisoning. Relative emphasis can be expected to vary as possibilities for different types of action are developed. Actions taken locally to minimize consequences are the establishment of the poison information center and the well-developed emergency treatment facilities available in most

hospitals. Preventive measures include follow-up of each reported case, statistical and epidemiological analysis, education, consultation, and proposed legislation. The potential for research into effects of certain substances and the management of selected cases is inherent in the program but no specific projects are currently underway. Such research is already an important function of the National Clearinghouse for Poison Control Centers, Public Health Service, to which statistical data from the Philadelphia program are provided.

### Minimization of Consequences

In recognition of the existing and expected occurrence of numerous cases of accidental poisoning, considerable effort has been expended in the development of facilities to minimize the consequences of these accidents.

The term "accidental poisoning" as used in

this program does not imply the evaluation of substances involved, with the establishment of some minimum level of toxicity before the substance is included. The term signifies the ingestion of a nonedible substance or the inhalation or other exposure to a substance which is believed to present some toxic hazard.

The Poison Information Center was the first operative part of the program because of this apparent need. In addition, it was recognized that the emergency information service would be a dramatic concrete activity through which attention could be focused on poisoning hazards. A further consideration was that cooperation in reporting of cases by hospitals would be enhanced by first providing them with such a service.

The Poison Information Center is at present located in the office of the medical examiner, a branch of the department of public health. It is under the technical supervision of the chief toxicologist. Information is given in emergencies on a 24-hour-a-day basis to anyone who telephones. Calls, answered by investigators from the staff of the medical examiner, are received on a direct incoming telephone line equipped with a distinctive bell commanding immediate attention. The telephone number of the Poison Information Center, WALnut 2-5524, has been widely publicized. Through the cooperation of the Bell Telephone Company of Pennsylvania, this number is listed in the "emergency calls" section of the Philadelphia and other southeastern Pennsylvania telephone directories.

The center gives full information regarding toxic ingredients, symptomatology, and recommended treatment measures to physicians and hospitals. Information to lay persons is limited to first-aid measures and a suggestion for immediate referral to a hospital or family physician, according to the seriousness of the case. It is felt that information on first-aid measures can be limited in an urban community where professional attention at a hospital is available within a few minutes in any area of the city. By alerting the hospital in advance, the net time before treatment is further reduced.

Use of a standard telephone inquiry form (see form) permits uniformity in handling and

<b>REPORT OF TELEPHONE INQUIRY</b> CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH			DATE RECEIVED AT P.I.C.		
MATERIAL (Poison) INVOLVED: NATURE AND AMOUNT					
NAME OF VICTIM			AGE	SEX	WEIGHT
ADDRESS			PHONE		
NAME OF CALLER			RELATIONSHIP		
ADDRESS OF CALLER			PHONE		
ACTION TAKEN BY PERSON ANSWERING PHONE. OTHER REMARKS					
DATE OF ACCIDENT	TIME OF ACCIDENT A.M. P.M.	PERSON RECEIVING INQUIRY			
<b>REFERRAL INFORMATION (For A.P.U. Use Only)</b>					
DATE RECD. FROM P.I.C.	DATE REF. TO H.D.	REFERRED TO HEALTH DISTRICT			
PERSON		REFERRED BY			

a written record of each case. This form also serves as a report to the central office.

In addition to the card file, an extensive reference library, and the services of the chief toxicologist of the office of the medical examiner, noted above, five panels of professional consultants may be called if necessary for additional guidance on therapy, composition of pharmaceuticals, household products, or pesticides and the effects produced by the bites or stings of poisonous plants and animals.

Recommendations are offered to the city hospitals by the poison control program on organization of treatment facilities, and the equipment, supplies, and medicinals, which are desirable. The emergency treatment facilities of Philadelphia General Hospital, a branch of the health department, have been fully developed with the cooperation of the hospital staff and the American College of Apothecaries. These facilities serve both as a model to other hospitals and as a source of emergency supplies and medicinals. Items required only on unusual occasions have been located and arrangements for immediate procurement at any hour have been made. This includes a complete supply of snake antivenin, which is supplied to Philadelphia General Hospital by the Philadelphia Herpetological Society or which is available through local pharmaceutical houses. All local hospitals providing emergency service have been supplied with a list of recommended items and an indication of where they may obtain them if needed in an emergency.

In the event that a hospital requires an item in an emergency, the poison information center advises where it can be obtained and arranges delivery by the police department, if necessary. The hospital is required to replace or pay for the item within a reasonable time.

Arrangements to make supplies and medicinals available on emergency loan have recently been broadened to provide this service to any community in the Nation. Commercial air carriers have volunteered to give shipments expeditious handling, and the Pennsylvania Air National Guard has offered to fly emergency missions. These requests will be handled in the same manner as requests from Philadelphia hospitals except that delivery will be made to the Philadelphia International Airport. If



schedules and the nature of the emergency permit, the required item is carried on a commercial flight. In cases of great urgency, transportation is arranged by a chartered flight or by the Air National Guard.

### Prevention

Efforts in prevention begin with a followup investigation by public health nurses of each reported case. The poison information center forwards to the accident control office a duplicate copy of the "Report of Telephone Inquiry" form. The hospitals of the city and surrounding areas complete and forward an especially designed "Report of Poisoning" form, which also gives information on the substance involved and clinical data.

Each case involving a resident of the city is immediately referred to the health district where the victim lives. An investigation is made within 5 days of the accident. Cases involving residents of other communities are re-



ferred to the local or State health department office having jurisdiction.

The public health nurse completes a "Follow-Up Investigation of Poisoning" form, and evaluates the environment and the family situation, providing advice accordingly. If indicated, the nurse will continue to assist the family. Her final report is also submitted to the accident control program where it is reviewed, coded, and collated with other reports on the case.

Currently, approximately 1,000 cases per year are being investigated. Investigations are made only when the exposure appears to have been accidental or the circumstances are not clear. Exposures involving suicidal or homicidal intent are excluded. Apparent suicide attempts are referred to the division of mental health for possible action in suicide control efforts.

Lead poisoning is regarded as a separate program activity because of the differences in

etiology and control measures involved. Cases of lead poisoning, when reported, are investigated by other personnel through a different set of procedures. Also, control measures are developed and applied separately from those of accidental poisoning.

After coding and collation, all forms received on each case are transferred by accident control personnel to the division of statistics and research where the data are recorded on machine punchcards, and tabulated periodically. Tables prepared are similar to those recommended by the National Clearinghouse for Poison Control Centers. It is hoped that continuing evaluation of the data on hand and opinions of those closely concerned with the program will provide increasing epidemiological insight through selective additional cross tabulations and possible modifications of followup reports.

Although specific data are regarded as essential to successful education, certain educational efforts have been made on the basis of

preliminary findings and empirical judgment. These efforts have been primarily promotional, to call attention to the seriousness of the problem and the resources available in an emergency.

Some public education has been accomplished by distribution of several hundred thousand copies of a leaflet entitled, "Accidental Poisoning: How To Prevent It: What To Do If It Occurs." The press, television, radio, and exhibits have been used. A limited number of talks have been given to community groups. Excellent cooperation has been received from a number of local groups, including the local chapter of the American Society of Safety Engineers, the Health and Welfare Council, Philadelphia Hospital Pharmacists Association, and local telephone officials.

Proportionately more emphasis has been given to presenting and developing the subject with various medical, nursing, and public health groups, where contacts are extensive and the program is well known. Requests for information are common.

A major effort in professional education has just been completed in the form of a full-day symposium on accidental poisoning. We hope to publish the proceedings. Those attending included the poison control coordinators and various other groups having professional or business interest in accidental poisonings, as typified by the original advisory committee.

Broader public education efforts have been delayed pending development of additional local data. While the need for even more epidemiological data is recognized, the extensive data already produced make it possible, we believe, to begin an ambitious plan of action. This plan contemplates the participation of each of the various disciplines of the department having central or health district contacts with public and professional groups.

It is recognized that certain control legislation is desirable, and data to support such legal controls are being gathered. It appears advisable, however, that legislation should be enacted by as large a political jurisdiction as possible, as long as the standards it establishes meet local needs. Design and maintenance standards in dwellings appear to be an important area for possible local legislation at this time.

## Evaluation

Evaluation of the operation of the program is a continual process conducted by the director and staff of the program with the assistance of the intradepartmental coordinating committee composed of the directors of cooperating divisions.

There is widespread and enthusiastic support in the community and an unquestioning acceptance of the hazards of accidental poisoning. This is in sharp contrast to the attitude displayed toward certain other types of accidents. Using the criterion of public acceptance, it appears that this has been a proper and adequately conducted program.

There seems to be little doubt that the poison information center should be under medical supervision. This is especially true of the actual dispensing of information. Despite the fact that it is clear to the caller that the person answering the telephone inquiry is not a physician, there is still some question of liability. In many instances a physician calls and there appears to be a desire on his part to discuss the case with the person providing the information. It appears preferable that first-aid information to parents or other lay callers be given under guidance of a physician.

Preparation of information cards and other steps to review and organize data for dispensing are now handled well at the center under supervision of a competent toxicologist, but nevertheless specific medical review and approval of each recommendation would be of considerable value.

There is a need for more intensive effort in analysis and interpretation of followup and hospital-reported data. Current statistical resources are competent but limited. In addition, there is need for continuing interpretation by personnel specifically charged with epidemiological analysis of this subject. More attention should be focused also on areas of research in the management of cases and the relative effect of a variety of substances on human beings, as opposed to empirical determinations or findings with experimental animals.

Attention by physicians and hospitals to accidental poisoning has grown steadily. Only additional time and effort is required to bring

additional knowledge, as it is obtained, to their attention.

The cost of this program is not measured readily because its activities are almost entirely absorbed by various cooperating divisions. However, estimates based on a careful review of personnel time and materials indicate that approximately \$55,000 per year is being used.

There is ample evidence, from surveys conducted by the American Academy of Pediatrics, from morbidity data and reported cases in Philadelphia, and from other statistics, to indicate that accidental poisoning is a major problem and that it is likely to continue to increase markedly unless effective preventive measures are applied. There can be little doubt that the emergency information given to more than 2,400 persons per year who were sufficiently alarmed to call the poison information center represents an important and valuable public service. Similarly, the emergency treatment of victims of accidental poisoning undoubtedly continues to improve as a result of the continuing exchange of ideas among the poison control coordinators of the various hospitals and our staff. It also appears that injuries from accidental poisonings can be reduced more readily than injuries from most other types of accidents.

The emergency information given, improvements in emergency treatment of cases, increased attention by both physicians and the general public, substantial data gathered for analysis, and general community mobilization are all regarded as useful contributions to the community welfare.

### **Plans for the Future**

It is hoped that the program may expand. One proposal, if accepted, would provide for an answering service 24 hours each day staffed by graduate nurses under supervision of a public health physician.

The establishment of an ad hoc committee of members of the professional community is planned to study the question of research into the toxic effects of certain substances and management and rehabilitation of cases, and to propose specific research studies.

The only major forecast is a change from

the present followup of all reported cases to a selective followup procedure, after data have been accumulated for another 2 or 3 years.

### **Summary**

The Philadelphia Department of Public Health conducts a poison information center which provides emergency information on the composition of over 20,000 trade name products and the treatment recommended if accidentally taken. Consultation in emergency and nonemergency situations is provided by a toxicologist and five panels of consultants to the program. The telephone number has been listed in the "emergency calls" section of the telephone directories of the area, as a public service by the telephone company.

Each hospital has appointed a poison control coordinator who is responsible for liaison with the program, staff education, and supervision of reporting of cases to the health department. Well-developed special treatment facilities exist in most of the hospitals of the city and immediate suburbs. Emergency transportation of victims to hospitals is provided by the police department. An inventory of rare or unusual drugs, supplies, and equipment has been prepared. The location of these items is recorded at the poison information center and has been supplied to each hospital. Special arrangements for emergency transportation of needed items have been made with the police department. Required items will also be transported by plane to any point in the Nation through the cooperation of the commercial airlines and the Pennsylvania Air National Guard.

Public health nurses conduct a home investigation of each reported case. Data on the case, including clinical history, are provided by the hospitals. These data are analyzed and interpreted statistically and epidemiologically. Cooperation with the National Clearinghouse for Poison Control Centers is maintained.

Public and professional education is conducted through mass media, wide associations with professional and civic groups, and by specially prepared materials, including exhibits and leaflets.

NOTE: The author will supply, upon request, copies of the various forms and literature used in the program.

# Federal Publications

**The Membrane Filter.** *PHS Publication No. 749; 1960; 20 pages; 20 cents.*

A teaching aid to supplement the filmstrip "The Membrane Filter," this booklet provides instruction on how to use the filmstrip. It contains black and white copies of the pictures appearing in the film and the full text of the sound record which accompanies the filmstrip.

These pictures and text illustrate and describe the use of the membrane filter technique for bacteriological analysis of water. Also included is information on how to obtain loan copies of the filmstrip with sound recording and other visual aids for water supply training.

**Directory of State and Territorial Health Authorities.** *PHS Publication No. 75; revised 1960; 104 pages; 35 cents.*

Health department personnel of each State and Territory are listed so as to reflect the organizational pattern of the department. Preceding the listing of health department officials is a listing of all State and Territorial Health officers, showing the title, headquarters address, and telephone number of each health department.

Similar information is shown for State agencies other than health departments administering grant programs of the Public Health Service and the crippled children's grant program of the Children's Bureau.

**Sanitation Facilities for Indians. What does P.L. 86-121 mean to you?** *PHS Publication No. 735; 1960; 6 pages.*

Designed primarily for Indian and Alaskan Native beneficiaries of the Public Health Service and their tribal leaders, this leaflet highlights the scope of projects and the requirements for participation under the Indian Sanitation Facilities Act (P.L. 86-121, approved July 31, 1959.)

Through questions and answers, the Public Health Service's authority to assist Indians in the construction of domestic and community water supplies, waste disposal, and other sanitation facilities is explained. Emphasis is placed on the participation of Indians in all phases of project development and construction, including assumption of their responsibilities for operation and maintenance.

**Summary of NIH Research Programs in Aging, 1959.** *PHS Publication No. 740; 1960; 16 pages; 15 cents.*

Research in aging carried out or supported by the National Institutes of Health during calendar year 1959 is briefly reported.

Divided into sections on intramural and extramural activities, the booklet discusses research in three broad areas: (1) biological process of aging; (2) chronic diseases associated with the aged; and (3) additional health-related problems. Special attention is given to studies conducted by the Section on Aging, National Institute of Mental Health, and the Gerontology Branch, National Heart Institute, and lists of papers and publications by their staff members are included.

Statistical summaries of extramural research are also presented.

**Community Health Program Materials. Selected references.** *PHS Publication No. 783; 1960; 59 pages.*

More than 250 references to selected materials produced primarily by the Bureau of State Services, Public Health Service, are listed.

Intended for use by State and local health departments and voluntary health agencies, the materials include guides to organizing and administering public health programs, recommendations for standards and codes, vital and health statistics, and health information for the public.

Some of the items will be of value in training and orienting employees new to public health programs; others, in presenting new knowledge in areas receiving increasing program emphasis such as chronic diseases and health of the aged, radiological health, air and water pollution, health mobilization, and accident prevention.

**Fertility Tables for Birth Cohorts of American Women. Part I. Annual and cumulative birth rates, by age, by order of birth for all women in cohorts of 1876 to 1943.** *Vital Statistics—Special Reports; Selected Studies; vol. 51, No. 1; Jan. 29, 1960; by Pascal K. Whelpton and Arthur A. Campbell; pages 1-129.*

Tables of annual and cumulative birth rates present various measures of fertility for actual groups of women from their 14th to their 50th birthday. The accompanying text explains the cohort fertility concept and methodology and describes the changes in cohort birth rates. It also gives examples of uses of cohort fertility rates.

The data presented are important in interpreting short-run changes in fertility as measured by conventional period rates, in assessing the effect of these changes on cumulative fertility and family size, and in making birth projections.

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This section carries announcements of new publications prepared by the Public Health Service and of selected publications prepared with Federal support.

Unless otherwise indicated, publications for which prices are quoted are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Orders should be accompanied by cash, check, or money order and should fully identify the publication. Public Health Service publications which do not carry price quotations, as well as single sample copies of those for which prices are shown, can be obtained without charge from the Public Inquiries Branch, Office of Information, Public Health Service, Washington 25, D.C.

The Public Health Service does not supply publications other than its own.

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